

Claims:

1. Combustion chamber (5) for a gas turbine (1) with an internal space (9) enclosed by a wall (8,11,12), which serves as a reaction space, with an inlet (6,15), which leads into internal space (9) and is supplied with fresh air, with at least one outlet (7,14), which emerges from the internal space (9) and serves to discharge hot exhaust gases, in which the inlet (6,15) and the outlet (7,14) are aligned and the internal space (9) is designed so that a large circulating flow is formed in internal space (9) to maintain a flameless oxidation process with a fuel feed device (18), set up to guide fuel into internal space (9) in a stipulated direction (24), with the fuel feed device and inlet (6,15) being oriented essentially the same.
2. Combustion chamber according to Claim 1, characterized by the fact that the cross sections of the inlet (6,15) and the outlet (7,14) and the geometry of the internal space (9) of the combustion chamber (5) are adjusted to each other so that the mass flow rate of the gas stream circulating in the internal space is larger than twice the mass flow rate of the stream introduced into inlet (6,15).
3. Combustion chamber according to Claim 1, characterized by the fact that the cross sections of the inlet (6,15) and the outlet (7,14) and the geometry of the internal space (9) of the combustion chamber (5) are adjusted to each other so that the flow rate of the gas stream circulating in the internal space is smaller than five times the flow rate of the stream introduced into inlet (6,15).
4. Combustion chamber according to Claim 1, characterized by the fact that the inlet (6,15) includes several air nozzles (15) arranged next to each other in a row.
5. Combustion chamber according to Claim 4, characterized by the fact that each air nozzle (15) has a section extending beyond wall (11).
6. Combustion chamber according to Claim 4, characterized by the fact that the air nozzles (15) have a corresponding orientation.
7. Combustion chamber according to Claim 1, characterized by the fact that the combustion chamber (5) is designed cylindrical and that the air nozzles (15) are arranged on a circle that is arranged concentric to combustion chamber (5).

8. Combustion chamber according to Claim 1, characterized by the fact that the combustion chamber (5) is designed as a circular ring.

9. Combustion chamber according to Claim 1, characterized by the fact that the inlet (6,15) and the outlet (7,14) are arranged, and the geometry of the internal space (9) is established, so that the forming circulation flow encompasses the entire internal space (9).

10. Combustion chamber according to Claim 1, characterized by the fact that the recirculation flow has only a single turbulence center (35).

11. Combustion chamber according to Claim 10, characterized by the fact that the turbulence center (35) lies on a curved line or a surface.

12. Combustion chamber according to Claim 1, characterized by the fact that the combustion chamber (5) has a preheating device (22).

13. Combustion chamber according to Claim 1, characterized by the fact that a guide device (17) is arranged in internal space (9) that divides the internal space (9) into a mixing and reaction channel (26) and a backflow channel (34).

14. Gas turbine (1)

with a compressor (2), a turbine (3) and with at least one combustion chamber (5) for flameless oxidation of fuel, enclosing an internal volume (9) and which has an inlet (6,15), which establishes an air inlet direction (24,25), that is connected to compressor (2), an outlet (7,14) that is connected to turbine (3), and a fuel feed device (18), which establishes a fuel introduction direction (24,25),

characterized by the fact that

the fuel introduction direction (24,25) and the air inlet direction (24,25) essentially agree.